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ABSTRACT

The value of infant stimulation is stressed in a report on the characteristics of infant development. The following five areas of development are discussed: sensorimotor, language, mental, emotional, and social. Stages of development during the first year in each of the areas are surveyed, and traditions in different countries are highlighted to illustrate techniques of stimulation. The role of the mother in providing the needed stimulation is considered and the authors conclude that the role of the mother is so important that it would be desirable to give women who work 6 months to a year maternity leave to provide this important function. (PHR)

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INTERNATIONAL CHILDREN'S CENTRE

INFANT STIMULATION

A review for educators and primary care personnel

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May 1979

Every child is born with a certain sensorimotor, emotional, and mental potential.

1) Prenatal period

It is now known that this potential is greater if the child is wanted

The relationship which is formed between the future mother and the foetus affects the latter's development; many studies by obstetricians as well as paediatricians and psychoanalysts tend to show that well before birth a child is sensitive to the mother's emotional state.

During this period the father - husband or partner of the mother - plays an important part through the emotional security which he gives her.

Pregnancy should be experienced with pleasure, and without fatigue or fear. It is necessary for the future mother to be relaxed, and to think joyfully of the child she is carrying. She must be well nourished and not have harassing work.

In the West, prematurity is frequent among women whose work is hard, especially if they also have long and tiring journeys to and from their work.

The living conditions of the future mother - physical, economic and emotional - are of the utmost importance if the child is to be born at term, weighing between 3000 and 3500 gr, and with its full potential for development.

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Contraception makes it possible for a child to be conceived when the parents want it.

It is thus important to educate adults, both men and women, so that births are planned; but it is also essential to take into account the environment in which they live, the culture, the psychological impact, and what a child represents in the family and social context.

In Latin America, among poor people, a large family represents more hands to do the work and not more mouths to feed.

In Africa and India, in a traditional environment, a child is always welcome, and represents the wealth of the clan and the family. Great importance is attached to pregnancy, and the future mother receives much social consideration; she is surrounded with solicitude, and is given special food; baths in which herbs are steeped are prepared for her, and massages get her ready for childbirth.

In many parts of Africa, women are well aware of the movements it is important to make during the last few months of pregnancy to help during childbirth.

Supervision of pregnancy. Prenatal visits should be an opportunity for advising the future mother, informing her, and reassuring her, especially in those countries where the family has split up, and where a woman feels lonely, with no support either from her family or from the community.

The review could be prepared thanks to a grant of the US Department of Health, Education and Welfare at the occasion of the International Year of the Child

In countries where malnutrition is common, birth weight at term may be less than 2500 gr.

2) Birth

Birth changes the foetus abruptly into a newborn infant, by introducing it into an entirely different environment. The infant is subjected to intense physiological excitations which start from its skin, and of which the feeling of cold seems to be the chief one. This great change in the living environment means that the infant needs to be attended to immediately and with care.

3) The newborn infant

As soon as the newborn baby has been fed, dressed in roomy clothes or wrapped in a large piece of material, according to the custom it is laid beside its mother or alone in a cradle.

Observation shows that it puts its hands in its mouth frequently, stretches and bends its limbs, opens its eyes, and can even look at an object moving a short way away from its eyes and reacts to sounds and

In the West, preparation for childbirth gives a woman a better understanding of her own body and of the development of the foetus. It provides a certain tranquillity, and a better relationship between the future mother and the unborn child. The woman learns what the different phases of childbirth are, and can participate actively in it : and this leads to a larger number of spontaneous deliveries, avoiding anaesthesia or forceps.

There are many countries in which mothers and traditional midwives protect the defenceless newborn infant from the shock of strong light or cold air by laying it immediately against the mother's body, covering its face, and putting it to the breast as soon as it starts to breathe.

A baby born in such conditions does not have a wrinkled face, its eyes are open, its limbs are relaxed, its cries are no more than whimpers, and its expression is peaceful and does not convey an impression of suffering.

A newborn baby can move more easily if its clothes are roomy.

Massages and manipulations, as practised in some countries in the first few hours of life, stimulate psychomotor development.

Putting a newborn baby to the breast immediately helps it to suck more easily, and this in turn stimulates the secretion of milk. Colostrum is good for a newborn infant.

voices. Day by day, the mother's constant care, given lovingly, is a continuation of the physiological resources which she provided during the prenatal period, and stimulates the learning process.

4) The first year

There is continuous and global development. It is artificial to divide this period into stages and to separate motorial, emotional, and mental development, except for the purpose of giving points of reference.

a) Sensorimotor development

The first two or three months of an infant's life are spent mostly in sleeping.

However, when awake :

- he increasingly watches what surrounds him;
- he reacts to sounds;
- he learns to raise his head, then to hold it up.

Between 3 and 6 months old :

- he can hold his head up;
- he begins to sit up;
- he begins to hold things between his palm and the last four fingers of his hand;
- he begins to put things in his mouth, which is a means of exploration for him.

Between 6 and 9 months old:

- he sits up for a long time;
- he can crawl towards an object or a person;
- he can pick up small objects between first finger and thumb;

This first year is marked by breast-feeding and weaning. Breast-feeding is a specially important time; it intensifies exchanges with the infant, and is a source of both comfort and stimulation.

The infant asks for the breast by his bodily movements or vocally, the mother gives it, and he sucks vigorously at the nipple; he also explores it with his lips and manipulates it with his hands. These are the first experiences of manual motricity.

The baby's bath-time and toilet is another important moment when the mother-child relationship is especially strong. At the beginning of this century, in Europe, it was recommended that infants should be left alone quietly in the cradle, in a darkened room, undisturbed, and that they should be wrapped in swaddling-clothes to keep their legs straight. In the Twenties, it was advised that they should be fed at regular hours. Nowadays, babies are no longer swaddled. Mothers are encouraged to feed them when they ask to be fed. They are more a part of family life.

From the first month onwards, the mother can hold her baby sitting up against her while she breast-feeds or bottle-feeds him, or, holding him firmly, while she washes him.

She can also hold him upright, supporting him under the armpits, and playing with him in this position. She can also let him kick about in his cradle, put him on the ground lying flat on his stomach on a blanket so

- he plays at throwing things down on the floor.

Between 9 and 12 months old :

- he can stand up, holding on to a wall or a piece of furniture;
- he can walk, holding on to something;
- he takes an increasing interest in his surroundings, and makes progress particularly in talking.

Stimulation provided by the mother is of the utmost importance in helping the newborn infant to develop his sensorimotor development.

The emotional security given by a mother who is available and given up mainly to her child during the first few months of his life is one of the most important factors in good physical, mental, and emotional development.

An infant looks intensely at his mother's face.

He usually takes his first steps to go and throw himself into the arms of his mother, who is squatting a short distance away and encouraging him to come towards her.

that he can move about quite freely, or put attractive objects where he can see them. He will thus be encouraged to raise his head, to roll over on his side, and to make creeping movements (it is interesting to note that African babies who are never left on the ground during their waking hours do not make creeping movements; nor do they often walk on all fours).

At about the fourth month, an infant may be propped up in a sitting position, with various objects placed around him so that he learns to pick things up with increasing precision.

The clumsy grip of an infant of three or four months old can be stimulated by a wide range of objects placed within his reach : rattles, boxes, balls, twigs , sheets of paper, pieces of material, pencils, beads - the smallest and thinnest things possible to help him to pick things up and hold them between his thumb and bent first finger.

As time goes on, he will watch more carefully the objects that his mother holds out, then those that she puts down around him. Without this exchange with his mother, an infant does not take an interest in things, he only looks at them when he picks them up.

The expression on his mother's face is a stimulus for an infant. He is attentive to his mother's voice, and her words make him use what she gives him even more. The mother's smile makes her baby smile in response. The mother's voice sets him babbling and cooing.

Indeed, even if an infant is in good physical health, he will be languid and apathetic unless someone - and more especially his mother - does not urge him to use his motor system.

The delayed development of infants who are left alone in their cradles for long periods is well know.

Hospitalism has been described in connexion with infants separated from their mother and left alone most of the time, in a hospital, a babies' home, or a day-care centre. But hospitalism can also happen at home, if a mother does no more than feed her baby and keep him clean, without showing him any affection.

b) Language

This is meant in the wider sense of communication.

Looks and smiles between mother and child are the first non-verbal exchanges.

Whimpering, cooing, and more and more clearly pronounced prattle are the baby's response to feelings of comfort and to his mother's words.

At about six months old, an infant laughs out loud, and pronounces a few syllables; he listens to an adult's talk and increasingly imitates it.

Crying and weeping indicate discomfort.

Understanding of words comes well before being able to use them.

By about the seventh or eighth month, the baby can be put in a pen; he goes round inside it on all fours, and uses it to try and stand up. Encouragement from the people around him, and particularly from his mother, will help him make this effort.

The baby is soon standing up by himself, without support, trying to take a few steps, and then walking with assurance.

In Africa, newborn infants are carried on the back almost as soon as they are born. Carrying them on the back helps them to hold their head up earlier, and hastens the motor development of the body axis, sitting up, and probably also walking, by stimulating the extensor muscles : an infant can hold his head up at about one and a half months, can sit up without support at about four months, walks at eight months, and runs at twelve or fourteen months.

It is important that the mother should talk to her baby while she is feeding him, washing him, taking him out of the cradle or putting him back into it, and that she should sing him nursery-rhymes.

In response to this stimulation, the baby tries to understand what his mother is saying to him, and to express himself in return. He watches her face, as though trying to read in it the words and phases that she pronounces.

In Africa, always on his mother's back, an infant hears the discussion going on around him, which is in fact often about him; this is probably why African children are so precocious in starting to talk. Interdictions come later, after language has been acquired, and they do not disturb its development : children may not speak in the presence of adults, but being constantly among them they can listen to them, and furthermore they talk with other children of their own age.

By the eighth month, an infant knows the meaning of «daddy, mummy, eat, drink....», and answers to his name, thus discovering his identity; he also recognizes other people by name.

At about twelve months old, he can say 5 to 10 words.

Language retardation, which is so often found among children brought up in institutions, corresponds to a lack of communication coming from adults.

c) Mental development

In the infant, intelligence merges with sensorimotor development : he is capable of motor activity, he has objects available around him, and he is constantly trying to do new things.

- From birth to three months, he follows an object with his eyes.

- From three to six months, he tries to pick things up and put them in his mouth.

- From six to nine months, he plays at throwing things down, trying to catch at them, and showing that he wants them back.

- From nine to twelve months, he tries to hold a number of objects, and takes an interest in the outsides of things as well as what is inside them.

- His powers of observation and memory develop increasingly. At the end of the first year his intellectual curiosity leads him to touch and explore everything around him.

d) Emotional development

Through the relationship that the young child establishes with his mother, the axis of his emotional life is formed.

The sense of wellbeing that she gives him by feeding him, washing

When a baby is in his cradle or in a bed, brightly-coloured moving objects stimulate his interest (e.g. a rattle, a ring, or a piece of material).

If he is on the ground, the various objects placed around him - pieces of string, boxes, stones, or cards - stimulate him not only to handle them but also to draw them towards him, bang them together, put them clumsily inside one another, pile them on top of one another... Catalogues, pencils and paper may already interest him by the end of the first year.

If he is encouraged verbally, and congratulated when he succeeds, he will constantly try to make new discoveries.

In Africa, where an infant is carried on the back from the first day of his life, he is quickly stimulated by everything around him that he can see and hear. On his mother's back he is at his observation post.

Feeding a baby on request, taking him tenderly in one's arms, skin against skin, talking to him softly, and caressing him are all of considerable importance for the harmonious development of his personality.

him, and talking to him are his first feelings of pleasure. When his appetite is satisfied he has a feeling of plenitude, whereas hunger makes him vindictive or apathetic. If the mother is to be available for her baby and capable of perceiving his fundamental needs and responding to them, she herself must have a satisfying relationship with the child's father. Harmony between the parents plays a vital role in the baby's development; an unmarried mother, or one who is on bad terms with her partner and is sad and unsatisfied, will have a great deal of difficulty in providing this sense of security.

A disease such as kwashiorkor is caused not only by malnutrition, but also by insufficient stimulation from the parents if they themselves do not have a good relationship.

Conflict between the parents, and the shrillness of their quarrels, may also be a reason for a very young child to sleep badly. And yet sleep is essential to enable a child to show an interest in his surroundings.

The relationship which the parents themselves have had with their own parents affects their life as a couple and their behaviour towards a child. The speedy development of the modern world cannot give them points of reference which would reassure them. There is often an enormous gap between their own education and that which they would like to give their children.

In many countries the family as a whole still lives together, and each member of it plays a part in building up the child's personality; the entire community participates in this, and provides security.

But some mothers do not know this. Post-natal visits, maternal and child health services, and counselling centres can help mothers to become aware of the importance of positive and stimulating behaviour towards an infant.

Young parents are often in need of advice or comfort which they do not get from their own parents, since in Western countries families are nearly always split up. Education must take into account the parents' experience, their skills, and their environment. The fact of being uprooted, and an abrupt break with tradition, generate mental disorders.

Satisfactory relationships within the family, complete harmony with the environment, and a good understanding between the parents are the factors which help to make a mother fully available and to produce a warm and homely atmosphere.

In India and Africa, the extended family in a traditional environment means that a child is never alone, but is always in contact with one or more people he knows.

The tolerance of those around them, the permanent presence of people, and the many sources of stimulation probably explain the happy expression of the very young children, even among the poorest population groups.

By the eighth month an infant is fully familiar with his mother and the members of his family with whom he lives; he can clearly distinguish strangers and because of this no longer accepts them as spontaneously as before.

Only when a young child feels secure can he take advantage of the various stimuli which are within his reach.

Weaning brings a change in the mother-child relationship. In the West it takes place progressively and is complete by about the fourth, fifth, or exceptionally the sixth month. It is already the beginning of separation from the mother. If the child is not properly prepared for it, it leaves him at a loss.

e) Sociability

Throughout the whole of the first year, as a result of the relationship of wellbeing that is established with the mother, a baby's sociability - that is, his ability to establish relationships with others - is developing.

Until about the eighth month, he willingly goes into other arms than those of his mother, and will exchange an object with other people.

From then on, however, he clings close to his mother, turns his head away from a stranger, clasps tightly on to the object he is holding - which indeed often tends to reassure him - and will not accept anything from a stranger.

At this age it is dangerous to separate an infant from his mother, even if he stays in the surroundings to which he is accustomed, especially because he has reached the stage of beginning to stand up, and of understanding the words which are essential for him and tyring to say them.

In most developing countries, weaning previously hardly ever took place until during the course of the second year; unfortunately it now tends to take place increasingly early, at about eight or ten months. In some areas of Africa it is often dramatic : not only does it happen suddenly, but it is accompanied by actual separation from the mother, the child being looked after by a grandmother or other older member of the family. The child suffers both physically and mentally.

It is essential for weaning to be progressive, with a balanced diet to replace it, and not to be accompanied by maternal deficiency. The mother should give the first few meals with the same care as when she gave the breast. This is especially important as the child no longer has the bodily contact, skin against skin, which was so beneficial for him.

It is also of the utmost importance for the mother to continue giving the child his bath and other bodily care.

An infant accustomed to his mother's smile will respond to an adult's smile with a smile.

It may seem surprising to note that whatever the society in which an infant lives (Western, where he comes into contact with comparatively few people and almost always the same ones, or African for instance, where his world is much more extensive), it is between the ages of eigt and eleven months that he can least tolerate the intrusion of strangers.

To be insistent may be very upsetting for him.

The mother-child relationship is of such great importance to a child's psychomotor development that it would be desirable for women who work to be given at least six months' or even a year's maternity leave.

It is sometimes necessary for an infant to be entrusted to a mother substitute (a relative, a mother's help, or a day nursery) when the mother is ill or has to work. Whether such an arrangement is by the hour, by the day, or for longer periods, it is essential that the mother substitutes should be aware of the needs of children, and especially that there should be a good relationsip between the true family and those who are helping it to bring up the child.

An infant is very sensitive to anxiety, to worry, and to words exchanged; even if he does not understand what is being said he is affected by a tone of voice.

Sudden separation, if he has not been properly prepared for it, may make a profound impression on a child's personality.

In the West, many infants attend day nurseries from the age of two or three months.

Day nurseries are increasingly well equipped, and the training and number of staff make it possible to respond to a great extent to the children's needs.

Nevertheless, very many infants become passive because they are got out of bed before they are properly awake, taken out in all weathers while they are still sleepy, and hastily dressed and wrapped up, then undressed again sometimes too roughly, when they are not ready for it.

When circumstances make a separation necessary, whatever the age of the child, it is important to tell him; even if he does not understand the words, he understands from the tone of voice or the look that he is being told something serious that concerns him.

It is important to avoid hospitalization; however, if this is necessary, the mother should be hospitalized with her baby whenever possible.

When an infant is left in the care of a mother's help or a day nursery, the dominant role must be left to the mother; she must talk to him, give him at least one meal in the day, bathe him, put him to bed, and get him up in the morning.

If the infant has to be left in the care of others for a long period, it is essential to make the mother understand that visits are of the utmost importance.

Day-care systems can be established among neighbours. An experiment of this kind has been carried out in Colombia : five or six mothers who work pay a neighbour to look after their children; such a system must of course ensure not only that the care is given in hygienic conditions, but also that the person concerned has the right personality. These mothers' helps must have support from MCH workers and educators in order to understand an infant's needs and reactions to separation from his mother.

In Africa, institutions for very young children are rare; infants are usually looked after by a young relative.

Being taken into the arms of a stranger, and comforted by her, however careful and gentle she may be, does not give an infant the same feeling of wellbeing as if he is comforted by his mother.

On the other hand, from the age of twelve of fifteen months onwards, when a child can move about more independently and help himself to toys, the day nursery becomes a good source of stimulation: it offers him a space specially made for him, and the chance to meet other children of his own age.

From birth to the end of his first year an infant covers a great deal of ground. From total dependence on his mother he acquires a certain amount of independence : he usually begins to walk, he can take hold of various objects by himself, he knows how to drink alone, eat a biscuit, hold a spoon clumsily, and make signs which show more clearly what he needs or wants.

He has begun to experience socialization, interest in his peers, and a certain amount of education.

If a child is to be ready for this autonomy, it is necessary for affectionate stimulation to have developed his potentialities throughout the first year of his life, in an atmosphere of emotional security that his family is best able to provide.

- A set of technical notes devoted to forms of day-care during the second and third years will be issued to complete this document.

IF YOU WANT TO KNOW MORE

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